





# CHOOSING THE RIGHT LIGHT

## BUYING GUIDELINES

A growing number of LED products are entering the market, adding to the many choices consumers already face. By 2025, 60 percent of residential lighting across the U.S. will be LED-based\*. While nearly all LED light sources offer energy savings, not all LED products are created equal, and LEDs may not always be the best fit for your application. Consider the following key features before buying your next light source.

## LIGHT OUTPUT

The higher the number of lumens, the greater the amount of light. For example, instead of looking for something that uses 60 W or more, you should look for a light source that produces 800 lumens or more.

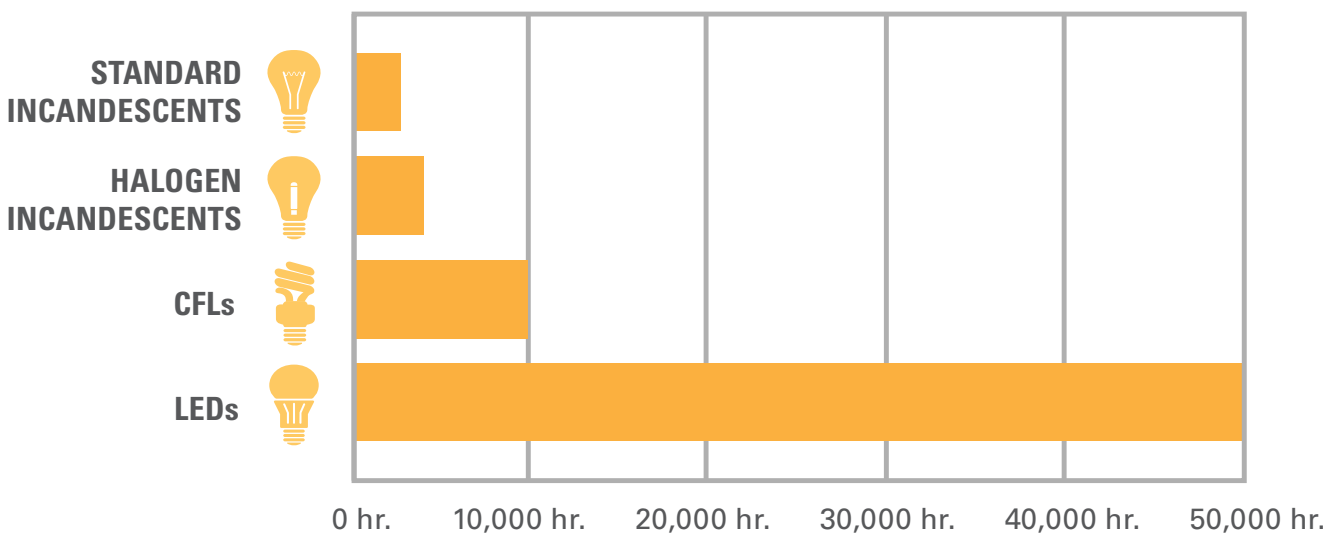
LUMENS		450	800	1100	1600
		LESS BRIGHT ← → MORE BRIGHT			
↑ MORE EFFICIENT ↓	 STANDARD INCANDESCENTS	40 W	60 W	75 W	100 W
	 HALOGEN INCANDESCENTS	29 W	43 W	53 W	72 W
	 CFLs <i>Save up to 75%</i>	9 W	14 W	19 W	23 W
	 LEDs <i>Save up to 77%</i>	8 W	13 W	17 W	N/A

\* U.S. Department of Energy, "Energy Savings Potential of Solid-State Lighting in General Illumination Applications," January 25, 2012.

### EQUIVALENT COMPARISON FROM WATTS TO LUMENS

## LIFE

Most LED light sources last much longer than incandescents or CFLs. High-quality LED light sources used in the home should easily last five years or more. You can expect to get at least 70 percent of the original light output, even toward the end of the life printed on the package. Lifetime is expected to increase in future products. When choosing LED light sources, look for at least 10,000+ hours (or about nine years) and a warranty of at least five years.



\* U.S. Department of Energy, "Life Reliability Fact Sheet," August 2013.

## Lighting Facts Per Bulb

**Brightness** 800 lumens

**Estimated Yearly Energy Cost \$1.18**  
Based on 3 hrs/day, 11¢/kWh  
Cost depends on rates and use

**Life**  
Based on 3 hrs/day 22.8 years

**Light Appearance**  
Warm 2700 K Cool

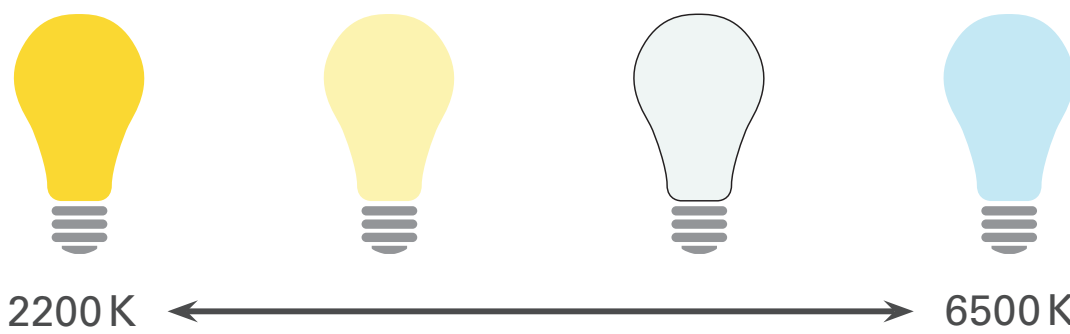
**Energy Used** 9.8 watts

## POWER

While nearly all LED sources save energy over traditional options, not all LED sources are created equal. It is important to keep performance considerations in mind, as well as reduced power consumption and energy use. The lower the rated power (in terms of Watts), the bigger the energy savings!

## CORRELATED COLOR TEMPERATURE

Correlated color temperature (CCT) is measured on the Kelvin scale (K). CCT refers to how warm or cool the light appears. Americans tend to prefer light sources with warmer CCT for their homes, typically in the 2700–3000 K range, but it is largely a matter of personal preference. Light sources with 6500 K CCT are often termed 'Daylight' and appear cooler.



## ENERGY COSTS AND DIMMING

The estimated annual energy cost to operate your light source, as shown on product packaging, is based on use of 3 hours per day and \$0.11 per kWh. These values are standard across all products.

Dimming allows you to easily adjust light levels—and it saves even more energy! If you are replacing track lights, downlights or accent lights, you should be aware that some components designed for older, less efficient light sources can cause dimmable LED light sources to flicker or dim poorly. Make sure the components you select are all compatible. Check product packaging or product literature to ensure compatibility. You might also look for products labeled "flicker free" or "plug and play". Always use manufacturer-recommended dimmers with your light sources. Light source packaging will often list or provide links to find compatible dimmers.

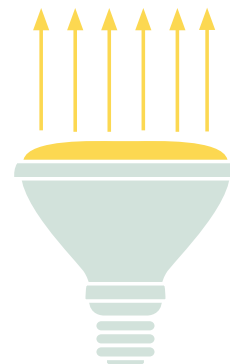
## PURPOSE

Light sources are generally either omnidirectional (giving off light in all directions) or directional (focusing light in one particular direction). Omnidirectional light sources include screw-base A-lamps—found in most of our table lamps. These distribute light uniformly in all directions and are ideal inside shaded lamps, wall sconces, post lights, and porch lights.

Common directional light sources such as those used for accent lighting (MR 16), floodlights or track lights (PAR), and downlights (R) need a specific angle of light. The "beam spread" or "beam angle" will help you estimate the coverage or spread of the light.



OMNIDIRECTIONAL



DIRECTIONAL

